SIMON FRASER UNIVERSITY S. 85-55

MEMORANDUM

To: Senate

From: Senate Committee on Undergraduate Studies

Subject: Department of Physics - Calendar Changes

Date: November 6, 1985

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of October 29, 1985 gives rise to the following motions:

MOTION 1:

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.85-55, the proposed minimum grade requirements."

MOTION 2:

"That Senate approve and recommend approval to the Board of Governors as set forth in S.85-55, that a statement on computer skills be added under Physics Major and Physics Honors requirements."

MOTION 3:

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.85-55, the recommended courses for an Applied Physics Option."

FOR INFORMATION

Acting under delegated authority at its meeting of October 29, 1985 the Senate Committee on Undergraduate Studies approved -

Changes in prerequisites for PHYS 331-3 AND 332-3.

SCUS 85-28

SIMON FRASER UNIVERSITY
MEMORANDUM

To: R. Heath, Secretary to Senate

From: P.Dobud, Administrative Assistant to the Dean of Science

Subject: Calendar Changes: Department of PHYSICS

Date: October 16,1985

Please find attached the documentation related to the following calendar changes for the Department of PHYSICS which were approved by the Faculty of Science meeting held on October 15,1985.

I would appreciate it very much if you would place these items on the agenda of the next SCUS meeting for consideration and approval.

1) Minimum Grade requirements. (PAPER: FSC-85-17)
That the minimum grade requirement for Physics courses be approved as follows:

Students wishing to register for Physics courses must have obtained a grade of C- or better in prerequisite courses.

2) Changes in prerequisites: a) PHYS 331-3 and b) PHYS 332-3

a)That the prerequisite for PHYS 331-3, Electronics Laboratory, be changed as follows:

From: *At least 3 semester hours of credit in 200 division Physics Laboratories. PHYS 326 must precede or be taken concurrently.*

To: At least 2 semester hours of credit in 200 division Physics Laboratories. PHYS 326 must precede or be taken concurrently.

b)That the prerequisites for PHYS 332-3, Intermediate Laboratory, be changed as follows:

From: *At least 3 semester hours of credit in 200 division Physic Laboratories. PHYS 355 must precede or be taken concurrently.*

To: At least 2 semester hours of credit in 200 division Physics Laboratories. PHYS 355 must precede or be taken concurrently.

3) Computer Skills. (PAPER: FSC-85-18)
That the following statement on computing skills be added under Physics Major and Physics Honors requirements:

Computing skills such as those obtained in CMPT 102 will be expected of students entering the second year Physics courses.

4) Applied Physics Option. (PAPER: FSC -85-19)
To approve the following Calendar entry for an Applied Physics option within the Physics Major Program:

PHYSICS MAJOR-APPLIED PHYSICS OPTION
The Applied Physics Option offers a solid background in physics combined with an orientation toward the applied aspects of physics necessary for students planning careers in high technology industries after completing their B.Sc. degrees. It is recommended that students also enrol in the COOP program in order to acquire valuable industrial experience.

RECOMMENDED COURSES FOR APPLIED PHYSICS

LOWER DIVISION COURSES : (48 semester hours)

CHEM 104-3 General Chemistry I
105-3 General Chemistry II
115-2 General Chemistry Laboratory I
CMPT 102-3 Introduction to Programming for Science Students
290-3 Introduction to Digital Systems *
291-1 Introduction to Digital Circuit Design
MATH 151-3 Calculus I
152-3 Calculus II
232-3 Linear Algebra
251-3 Calculus III
252-3 Vector Calculus I
PHYS 120-3 Physics I
121-3 Physics II
131-3 General Physics Laboratory
211-3 Intermediate Mechanics
221-3 Intermediate Electricity and Magnetism
233-2 Introductory Physics Laboratory A
234-2 Introductory Physics Laboratory B
UPPER DIVISION COURSES : (45 to 47 semester hours)
Core
CMPT 390-3 Digital Circuits and Systems*
391-3 Microcomputer Hardware Worksho
MATH 310-3 Introduction to Ordinary Differential Equations
316-3 Numerical Analysis I
PHYS 324-3 Electromagnetics
326-3 Electronics and Instrumentation
331-3 Electronics Laboratory
332-3 Intermediate Laboratory
344-3 Thermal Physics
355-3 Optics
385-3 Quantum Physics
431-4 Advanced Physics Laboratory I
and either
NUSC 341-3 Introduction to Radiochemistry
342-3 Introduction to Nuclear Science
346-2 Radiochemistry Laboratory

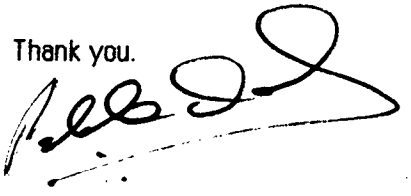
or three of
PHYS 365-3 Semiconductor Device Physics
455-3 Laser Physics
465-3 Solid State Physics
432-4 Advanced Physics Laboratory II (project)

Non-Science Electives - A minimum of 6 semester hours of electives from the Faculty of Arts.

In addition to the courses listed above, the students must elect sufficient unspecified courses in any division to complete a minimum of 120 semester hours total credit.

*CMPT 290-3 and CMPT 390-3- The prerequisite CMPT 105-3 may be waived provided that CMPT 102-3 has been taken.

Thank you.



c.c. Dr. R. Frindt, Chairman, Faculty of Science Undergraduate Curriculum Committee.
Dr.J.C.Irwin,Chairman,Department of Physics.

SIMON FRASER UNIVERSITY

FSC-85-17

MEMORANDUM

To: Dr. P. Dobud Administrative Assistant to the Dean of Science	From: R. F. Frindt, Acting Chairman Department of Physics
Subject: CALENDAR CHANGES	Date: 1985 04 02

The following motions were passed by the Physics Department:

1. **Minimum Grade Requirement:**

   Students wishing to register for Physics courses must have obtained grades of C- or better in prerequisite courses. ~~Students will not normally be permitted to enrol in any PHYS course for which a D grade or lower was obtained in any prerequisite.~~

   Rationale: Students with D grades in prerequisite courses are not adequately prepared for subsequent courses.

2. **(a) That the prerequisite for PHYS 331-3 (Electronics Laboratory) be changed:**

   from: At least 3 semester hours of credit in 200 division Physics Laboratories. PHYS 326 must precede or be taken concurrently.

   to: At least 2 semester hours of credit in 200 division Physics Laboratories. PHYS 326 must precede or be taken concurrently.

   (b) That the prerequisite for PHYS 332-3 (Intermediate Laboratory) be changed:

   from: At least 3 semester hours of credit in 200 division Physics Laboratories. PHYS 355 must precede or be taken concurrently.

   to: At least 2 semester hours of credit in 200 division Physics Laboratories. PHYS 355 must precede or be taken concurrently.

   Rationale: The change in laboratory prerequisite fits in with an earlier credit change in our 2nd year labs. from 3 hours to 2 hours, and allows Chemical Physics students direct access to PHYS 331-3 and PHYS 332-3.

R.F. Frindt

R. F. Frindt

RFF/ml

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM (Prerequisite Change)

1. Calendar Information

Department: Physics

Abbreviation Code: PHYS Course Number: 331 Credit Hours: 3 Vector: 0-0-4

Title of Course: Electronics Laboratory

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions): At least 2 semester hours of credit in 200 division Physics laboratory. PHYS 326 must precede or be taken concurrently.

What course (courses), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered?

Semester in which the course will first be offered?

Which of your present faculty would be available to make the proposed offering possible?

3. Objectives of the Course

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library

Audio Visual

Space

Equipment

5. Approval

Date: Oct 17/85 OCT 16 1985

Department Chairman Dean Chairman, SCUS

SCUS 73-34b:- (When completing this form, for instructions see Memorandum SCUS 73-34a. Attach course outline).

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM (Prerequisite Change)

1. Calendar Information

Department: Physics

Abbreviation Code: PHYS Course Number: 332 Credit Hours: 3 Vector: 0-0-

Title of Course: Intermediate Laboratory

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):

At least 2 semester hours of credit in 200 division Physics laboratory. Phys 355 must precede or be taken concurrently.

What course (courses), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered?

Semester in which the course will first be offered?

Which of your present faculty would be available to make the proposed offering possible?

3. Objectives of the Course

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library

Audio Visual

Space

Equipment

5. Approval

Date: Oct 17/85 OCT 16 1985

Department Chairman Dean Chairman, SCUS

SCUS 73-34b:- (When completing this form, for instructions see Memorandum SCUS 73-34a. Attach course outline).

SIMON FRASER UNIVERSITY

FSC-85-18

MEMORANDUM

To: Dr. R. F. Frindt, Chairman Faculty of Science Undergraduate Curriculum Committee	From: J. C. Irwin, Chairman Department of Physics
Subject: CALENDAR ADDITION	Date: 1985 09 25

The Physics Department will be making greater use of computers in undergraduate studies, particularly in our laboratories and upper-level courses and would like the following statement included in the calendar for both the Physics Major and Honors programs:

> **"Computing skills such as those obtained in CMPT 102 will be expected of students entering the second-year Physics courses."**

J. C. IRWIN

JCI/ml

c.c. Ms. N. J. Fisher

SIMON FRASER UNIVERSITY

FSC - 85 - 19

MEMORANDUM

To: Dr. R. F. Frindt, Chairman Faculty of Science Undergraduate Curriculum Committee	From: J. C. Irwin, Chairman Department of Physics
Subject: APPLIED PHYSICS OPTION	Date: 1985 09 23

Attached is a proposal for an Applied Physics option within the Major Physics program. There is considerable student interest in applied physics and, as indicated in the preamble, we think that the Applied Physics option will provide students with a solid background for careers in high technology industries.

J. C. IRWIN

JCI/ml

Enclosure

FSC-85-19

PROPOSAL

PHYSICS MAJOR - APPLIED PHYSICS OPTION

The Applied Physics option offers a solid background in physics combined with an orientation toward the applied aspects of physics necessary for students planning careers in high technology industries after completing their B.Sc. degrees. It is recommended that students also enrol in the COOP program in order to acquire valuable industrial experience.

REQUIRED COURSES FOR APPLIED PHYSICS

LOWER DIVISION COURSES (48 semester hours)

CHEM 104-3 General Chemistry I
105-3 General Chemistry II
115-2 General Chemistry Laboratory I

CMPT 102-3 Introduction to Programming for Science Students
290-3 Introduction to Digital Systems
291-1 Introduction to Digital Circuit Design

MATH 151-3 Calculus I
152-3 Calculus II
232-3 Linear Algebra
251-3 Calculus III
252-3 Vector Calculus I

PHYS 120-3 Physics I
121-3 Physics II
131-2 General Physics Laboratory
211-3 Intermediate Mechanics
221-3 Intermediate Electricity and Magnetism
233-2 Introductory Physics Laboratory A
234-2 Introductory Physics Laboratory B

UPPER DIVISION COURSES (45 to 47 semester hours)

Core

CMPT 390-3 Digital Circuits and Systems
391-3 Microcomputer Hardware Workshop*

MATH 310-3 Introduction to Ordinary Differential Equations
MACM 316-3 Numerical Analysis I

PHYS 324-3 Electromagnetics
326-3 Electronics and Instrumentation
331-3 Electronics Laboratory
332-3 Intermediate Laboratory
344-3 Thermal Physics
355-3 Optics
385-3 Quantum Physics
431-4 Advanced Physics Laboratory I

And Either

NUSC 341-3 Introduction to Radiochemistry
342-3 Introduction to Nuclear Science
346-2 Radiochemistry Laboratory

or three of:

PHYS 365-3 Semiconductor Device Physics
455-3 Laser Physics
465-3 Solid State Physics
432-4 Advanced Physics Laboratory II (project)

Non-Science Electives - A minimum of 6 semester hours of electives from the Faculty of Arts.

In addition to the courses listed above, the students must elect sufficient unspecified courses in any division to complete a minimum of 120 semester hours total credit.

*CMPT 290-3 and CMPT 390-3 - The prerequisite CMPT 105-3 may be waived provided that CMPT 102-3 has been taken.